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ABSTRACT

Findings from the Iowa Assessment Project are examined regarding the assessment and use of information on adaptive behavior and sociocultural background in decisions about students with mild mental retardation. Background aspects reviewed include terminology regarding mild retardation; research, litigation, and legislation on the topic during the 1970s; and an analysis of the System of Multicultural Pluralistic Assessment (SOMPA) and the Adaptive Behavior Inventory for Children (ABIC). Scores of 100 White and 100 Black third graders on the Wechsler Intelligence Scale for Children-Revised, the SOMPA, the ABIC, and the SOMPA Sociocultural Measures (SCM) were analyzed. Among findings were that the mean ability (academic aptitude) level among Iowa school age children is significantly above the national population average and the ABIC norms are accurate for Iowa children. Policy implications include justification of higher IQ cutoff score in Iowa than suggested by the American Association on Mental Deficiency; recognition of limitations of the ABIC; and the need for further research on SOMPA SCM validity and reliability. (CL)

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STATE NORMS FOR IQ, ADAPTIVE BEHAVIOR, AND SOCIOCULTURAL STATUS: IMPLICATIONS FOR NONBIASED ASSESSMENT

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ACKNOWLEDGEMENTS

The Iowa Assessment Project represents one of the best things about Iowa, the high level of cooperation among persons representing different agencies and disciplines. The Iowa Assessment Project was carried out with a minimum of external funding, less than $1,000, through the cooperation of persons representing many agencies and disciplines. The list of persons who made significant contributions to carrying out this project is simply too long to enumerate. The agencies and disciplines involved were the following: The Iowa Department of Public Instruction; Iowa State University, Department of Psychology; the Area Education Agency Directors of Special Education; the Area Education Agency Supervisors of School Psychological Services; numerous school psychologists and social workers throughout the state; superintendents of local school districts; principals in elementary schools in Iowa; and most importantly, parents and children in Iowa public schools. Many persons from each of the above agencies and disciplines provided various kinds of assistance to the project. In most instances, these persons provided assistance as part of their normal professional responsibilities, usually in addition to and above their normal work loads. We gratefully acknowledge these contributions, and join with these persons in the hope that this project will lead to better assessment and better educational programming for children in the state of Iowa.

OVERVIEW

In recent years, greater emphasis has been placed upon the assessment and use of information on adaptive behavior and sociocultural background in decisions about students with special needs. A variety of forces have combined to establish adaptive behavior, and to a lesser extent, sociocultural background, as critical variables in decisions about special education classification and programming. These issues exist in a broader context of concern about the appropriateness of conventional measures of ability and achievement for culturally different students, and the implications of classifying larger percentages of minority students as mildly handicapped, especially mildly mentally retarded.

Current practices in Iowa concerning the assessment and use of information on adaptive behavior and sociocultural background leave much to be desired. This status of affairs is not unique to Iowa. There is ample evidence to suggest that these areas are not assessed adequately or considered carefully in decisions by assessment personnel throughout the United States. Related to these concerns are discussions about the criteria used in Iowa for classification of students as mentally disabled. Classification criteria used for mental disabilities and the conception of mental disabilities are closely related to the assessment and use of information on adaptive behavior and sociocultural background.

The purpose of the Iowa Assessment Project was to collect information on recently developed procedures for assessing adaptive behavior and sociocultural background, and to examine the appropriateness of these measures for students in Iowa. These data also have implications for the criteria that are established in Iowa to classify students as mentally disabled.

The Iowa Assessment Project was initiated as the result of discussions in 1978 among persons in the Division of Special Education, Iowa Department of Public Instruction and the Department of Psychology, Iowa State University. Also involved in these discussions during the early stages were the Supervisors of School Psychological Services and the Directors of Special Education from the 15 Area Education Agencies. Salient concerns expressed in these discussions centered on: 1) The adequacy of current practices concerning assessment and use of information on adaptive behavior and sociocultural background; 2) The appropriateness of the classification criteria used in Iowa in the area of mental disabilities. (The Federal Office for Civil Rights had expressed questions about the criteria used in Iowa in mental disabilities classification); and 3) The fact that at least one school district in Iowa had been cited by the Office for Civil Rights for overrepresentation of minority students in programs for the mildly retarded. One of the issues in the citation had to do with the adequacy of assessment and use of adaptive behavior information.

Purposes and Summary

Three purposes for the Iowa Assessment Project were established as

a result of these discussions. The first purpose was to estimate the average abilit, level of school age children in Iowa using an individual intelligence test commonly used during the preplacement evaluation of students who were referred for possible special education programming. The results of the study suggested that both black and white students obtain scores significantly above the respective national population averages. This finding is similar to previously published results concerning the mean ability level of students in Iowa. The second purpose was to investigate the usefulness of a recently published adaptive behavior scale, the Adaptive Behavior Inventory for Children (ABIC). The norms for this scale are based upon samples of children from only one state, California. In general, the norms for the ABIC appear to be applicable to both black and white students in Iowa. Other questions concerning the use of the ABIC in Iowa are discussed later in this report. The third question had to do with the assessment of sociocultural background using a newly published scale, the SOMPA Sociocultural Measures. The Sociocultural Measures also are used in a rather complex procedure to adjust conventional intelligence test scores. Again, the norms for these scales and the procedure for adjusting conventional intelligence test scores are based upon samples of children in California. In general, the results from the Iowa Assessment Project suggest that the sociocultural measures are appropriate both for black and white students in the state of Iowa. However, the procedure to adjust conventional intelligence test scores, based upon California data, does not work very well for students in Iowa.

Information concerning selection of the sample, collection of the data, analysis of data, and results related to each of the three questions is presented in subsequent sections of this report. Policy implications of these results are discussed in the final section.

BACKGROUND

Concept of Mild Mental Retardation

Perhaps the most fundamental issue providing the overall context for the Iowa Assessment Project has to do with the meaning of mild mental retardation, or using Iowa terminology, the meaning and implications of minimal or mild mental disability. Much of the confusion and sometimes heated debate surrounding the issue of overrepresentation of minorities in special education programs for the mildly retarded involves implicit assumptions about the nature of mental retardation. The miscommunication that often results in discussions involving civil rights advocates and minority representatives on one hand, and psychologists and special educators on the other, arises from failure to agree upon the meaning of the diagnostic construct of mild mental retardation.

The traditional pre-1960 conception of mental retardation suggested or implied that it was a disability due to a biological anomaly that

caused comprehensive incompetence and was permanent. Research in the 1930's, 40's, and 50's suggested that these implicit assumptions were largely correct for the more severely retarded, but were incorrect for the vast majority of the mildly retarded. In fact, it has been known for many years that the mildly retarded generally are situationally incompetent, usually in the public school setting, they do not exhibit any identifiable biological anomaly, and most of them function within broad normal limits as adults, that is, most of them function independently and are self supporting as adults. During the 1950's, this led to a debate over the concept of pseudo-feeblemindedness, a term attached to persons who functioned within normal limits as adults, but had earlier been judged as mildly retarded. The term pseudo-feeblemindedness implied that the original diagnosis of mental retardation was incorrect or that the person functioned earlier within the mentally retarded range due to some atypical etiology (Benton, 1956). Careful study of these cases revealed that most were competently diagnosed, and no evidence of atypical etiology could be identified. The solution to the paradox, developed in about 1960, was to change the implicit assumptions related to the diagnostic construct of mild mental retardation.

The American Association on Mental Deficiency (AAMD) Manual on Terminology and Classification released in 1961 (Heber, 1961) attempted to resolve these issues. The 1961 AAMD Manual presented a two-dimensional conception of mental retardation in which intelligence was the principal dimension and adaptive behavior was the subordinate dimension. The most important feature of the 1961 AAMD Manual was the conception of mental retardation as a diagnosis referring only to the individual's current status with no implicit assumptions about etiology or prognosis. The earlier dilemma of mental retardation being permanent, comprehensive, and biological was therefore avoided by focusing on current status, not specifying etiology and not specifying prognosis. Moreover, the conception of adaptive behavior provided in the 1961 AAMD Manual emphasized different activities and competencies depending on the age of the individual. For our present discussion, the most important feature of the 1961 conception of adaptive behavior was the emphasis on the criterion of classroom performance for school age children. In fact, the 1961 AAMD Manual suggested rather clearly that various indices of academic achievement were sufficient for assessing adaptive behavior among school age children. One other important feature of the 1961 AAMD Manual was the use of the statistical criterion of -1 standard deviation below the mean on an individual intelligence test define the borderline level of mental retardation. Persons functioning in the range of -1 standard deviation to -2 standard deviation below the mean, or an IQ score of approximately 70 to 85, could be classified as borderline mentally retarded.

Subtle changes were made in the 1970's revisions of the AAMD Manual (Grossman, 1973, 1977). The basic conception of mental retardation was not changed, i.e., mental retardation continued to be defined in terms of the current functioning of the individual with no assumptions made about etiology or prognosis. The subtle, but highly significant, changes

occurred with respect to the relationship of the two dimensions of mental retardation, with the criteria used to define the highest level of mental retardation, and the broadened conception of adaptive behavior. In the 1970's revisions, the adaptive behavior and intelligence dimensions were equal in importance. In contrast to the 1961 revision, adaptive behavior was no longer a subordinate dimension. Further emphasis on adaptive behavior occurred through a broadened conception of adaptive behavior for school age children. The 1970's revision suggested that although the school setting and the academic social role were important criteria of adaptive behavior for school age children, in isolation they were insufficient. In addition to school functioning, adaptive behavior for school age children was to focus upon the child's competencies in coping with the practical everyday demands of living outside of the school and the application of academic kinds of skills to situations outside of the school. Finally, in the 1970's revisions of the AAMD Manual, the borderline level of mental retardation was deleted through changing the basic criterion from -1 standard deviation to -2 standard deviations below the mean. This change in criteria markedly influenced the numbers of persons who might be eligible for a classification of mild or borderline mental retardation.

Research, Litigation, and Legislation in the 1970's

Research published in the 1970's on the classification of children as mildly retarded was highly influential on changes in the AAMD Manual. Perhaps the key study was Mercer's (1973) work on the process whereby persons come to be regarded as mentally retarded. Although Mercer's results came as no surprise to school psychologists and special educators, Civil Rights Advocates and minority professionals interpreted her findings as indicating biased educational practices. Mercer pointed out that the community agency most likely to diagnose a child as mentally retarded was the public school. Moreover, the persons classified as mentally retarded by the public school were more likely to be mildly retarded, and children from minority groups were overrepresented in this classification. In addition, Mercer noted that the vast majority of children classified as mildly retarded were from economically disadvantaged environments regardless of racial or ethnic status. This question of whether the overrepresentation of minorities occurs due to conditions of economic disadvantage or due to minority cultural characteristics was not resolved in Mercer's study, although her conclusion was that it was more due to cultural differences than the effects of poverty. The overrepresentation issue identified by Mercer in the early 1970's has become a critical concern within special education generally. The various reports from the President's Committee on Mental Retardation during the 1970's also reflected this concern. In the middle and later 1970's the Federal Office for Civil Rights investigated the degree of overrepresentation and placed pressure upon school districts to reduce this overrepresentation.

Litigation in the 1970's also was important as an expression of concern about overrepresentation of minorities in programs for the mildly retarded. The most important cases, Diana, 1970; Guadalupe, 1972; and

Larry P., 1972, 1974, 1979 were based upon class action suits related to the overrepresentation of minorities in special class programs for the mildly retarded. There were a number of implicit issues in these court cases which generally were not addressed by the courts. The implicit issues included: 1) conception of mild mental retardation, 2) the meaning of intelligence test results, 3) the role of IQ tests in the placement process, 4) the appropriateness and comprehensiveness of the assessment procedures used in the preplacement evaluations, 5) the effectiveness of special education programs, and so on. Further discussion of these issues is available in Reschly (1978, 1979, 1981). Nevertheless, the focus of the court decisions was on the appropriateness of the assessment process used in classifying minority students as mildly retarded. Two major concerns were expressed in the various court decrees. First, there was the concern about biases in intelligence tests and the fact that intelligence tests did not take into account differences among persons in sociocultural background. Second, there was the concern that the child's competencies outside of the school environment, or what might be called adaptive behavior, was not assessed and considered in the decision making process. Various court decrees and opinions established requirements that the instruments or measures used during the preplacement evaluation must be nondiscriminatory and that a wide variety of information be considered before a child is classified as mildly retarded. Many of the aspects of the various court decisions were included in Federal Legislation and accompanying Rules and Regulations. The PL 94-142 Rules and Regulations, particularly the Protection in Evaluation Procedures provisions, are nearly identical to one or more court decrees.

Research, litigation, and legislation in the 1970's established clear challenges to special educators and related services personnel who were involved with classification and educational programming. The challenges arise from the implicit conception of mental retardation apparent in the court decisions as well as research by Mercer. In addition, greater emphasis has been placed upon assessment of adaptive behavior outside of school and upon the consideration of sociocultural background in the interpretation of conventional assessment devices. Finally, the criteria for classifying persons as mentally retarded were challenged in a number of court cases as well as by the Federal Office for Civil Rights. States such as Iowa which use less stringent criteria have been and undoubtedly will continue to be required to justify their classification criteria.

Iowa Students: Characteristics and Classification Criteria

The term used in Iowa to refer to mental retardation is mental disabilities. The criteria for classification of students as having a mental disability are in many ways similar to the 1961 AAMD Manual on Terminology and Classification. The Iowa Department of Public Instruction Rules and Regulations for Special Education describes mental disabilities as an impairment involving subaverage intelligence which is associated with problems in adaptive behavior. The various levels suggested in the Iowa Rules and Regulations include what the AAMD Manual called borderline mental retardation. The Iowa system allows classification of a student as mentally

disabled when intellectual functioning is in the range of 70 to 85. Such students would not meet the criteria established in the 1970's revisions of the AAMD Manual on Terminology and Classification.

Earlier in this report a comment was made about the quality of assessment practices in Iowa in the area of adaptive behavior. It should be noted that any commentaries on the quality of assessment in this area must begin with specifications of a conception of adaptive behavior. If adaptive behavior is conceptualized for school age children as academic performance, then it is highly likely that the quality of assessment practices in this state have been adequate, and even exemplary in many cases. However, if adaptive behavior for school age children is conceptualized as performance in school and performance in various social roles and social settings outside of school, then the quality of assessment practices to date has not been very high. It probably should be added that the quality of assessment practices in other places has not been very good either. Because of the unique features of the Iowa classification system, the use of a higher IQ cut-off score and the use of an earlier AAMD conception of mental retardation, school districts in the state may be particularly vulnerable to citations from the Federal Office for Civil Rights as well as other kinds of criticism. The adequacy of various aspects of the preplacement evaluation including the assessment of adaptive behavior and the quality of special education programming are likely to receive more attention since the state is out of step with the semi-official AAMD classification system.

Although the situation in Iowa is inconsistent with the 1970's revision of the AAMD Manual, it is apparent from two recent studies that many other states also use classification criteria in mental retardation that are inconsistent with the AAMD system. Two studies have been conducted recently on state guidelines for classification of students as mentally retarded (Huberty, Koller, and Tenbrink, 1980; Patrick and Reschly, 1981). Both studies suggested wide variations in terminology, in the conception and use of adaptive behavior as part of the classification process, and in the IQ criteria used to establish the highest level of mental retardation. Clearly, Iowa is not the only state using a higher IQ cut-off and other classification criteria that are inconsistent with the 1970's revision of the AAMD Manual. Perhaps the most interesting finding in the Patrick and Reschly study was the IQ cut-off score was negatively related to the prevalence of mental retardation. States varied in IQ cut-off score from 69 to 85. However, states with relatively higher cut-off scores had a lower prevalence of mental retardation, and states with relatively lower cut-off scores, for example, 69 or 70, tended to have a higher prevalence. These results suggest that mental retardation prevalence is determined by factors other than the classification criteria established by State Departments of Education. Other factors found to be particularly important as correlates of mental retardation prevalence were median education level in the state, per capita income, and rate of illiteracy. These results may reduce the emphasis on classification criteria and the assessment process generally in discussions of the appropriateness of mental retardation classification.

Classification criteria for mildly handicapping conditions are not absolute. Classification criteria for these areas are by and large based upon normative judgments about the child's degree of need in relation to grade and age level expectations and in relation to the performance or behaviors of other students. These classification criteria are best understood from the reference point of what Mercer (1979) regards as a social system model. The social system model, in contrast to a medical model, is based upon degree of deviance in the individual's behavior from expectations within a particular social setting or for a particular social role.

Information on the characteristics of Iowa students suggest that different criteria for defining mental disabilities may be appropriate in this state. The notion of social settings and social roles, and deviance from expectations, suggests consideration of the average level of performance of students in Iowa schools. Studies conducted in the 1950's and 1960's on ability level of Iowa school age students suggest that expectations in Iowa are likely to be considerably higher than in other states. These higher expectations for academic performance arise from the higher level of performance of Iowa students on various measures of ability and achievement.

Stroud and Showalter (1959) reported results from a study of a large randomly selected sample of 5th grade students in Iowa. The Lorge-Thorndike Verbal Ability Test, a group administered standardized intelligence test, was administered. The average score of Iowa 5th grade students on this test was 109, or about 2/3rds of a standard deviation above the population mean. Differences were apparent at all points in the distribution, not just in average score. More Iowa students obtained high scores and fewer Iowa students obtained low scores. Similar results were reported by Hieronymus and Stroud (1969) based upon a study of a large sample of 4th, 7th, and 10th grade students in Iowa. In this study, several different group ability tests were used. Again, the average scores across various tests and across various grade levels were significantly above the national population average. Although there were slight variations among the tests and across the grade levels, Iowa students typically obtained scores in the range of 110 to 115. From these studies, the evidence would suggest that Iowa school age children perform at a level significantly above the national population average. Group achievement test results for Iowa students also are consistent with the generalization of higher ability and achievement among students in Iowa. Iowa students typically obtain scores that are significantly above national averages. The superiority of Iowa school age students on ability and achievement tests is particularly apparent at the early and middle grade levels. The size of the difference between Iowa students and national population averages is not quite as large at the secondary grade levels. One explanation that has been advanced to explain this phenomenon is the greater holding power of Iowa schools, i.e., the lower drop out rate in Iowa schools (Hieronymus & Stroud, 1969).

The System of Multicultural Pluralistic Assessment

Two of the questions in the Iowa Assessment Project were related to the use of instruments from the System of Multicultural Pluralistic Assessment (SOMPA) (Mercer, 1979). SOMPA represents Mercer's efforts to carry out three policy recommendations from the Riverside Studies. These policy recommendations were: 1) to lower the IQ cut-off score for defining mental retardation to the traditional criterion of minus two standard deviations below the mean; 2) to assess adaptive behavior in social settings outside of the school environment; and 3) to eliminate the biases in conventional tests of intelligence. SOMPA is now marketed by the Psychological Corporation, and is advertised widely in professional journals as providing nondiscriminatory assessment procedures.

There are three major innovations in SOMPA. First, the various measures in SOMPA are clearly organized around three different models of assessment. The models of assessment, Medical, Social System, and Pluralistic, serve to clarify the purposes of the assessment process through identification of appropriate measures, assumptions, and underlying values. A second innovation in SOMPA is the development of new measures such as the Health History Inventory, the Adaptive Behavior Inventory for Children, and the Sociocultural Measures. These new measures along with traditional measures such as the Bender Gestalt and the WISC-R are designed to provide a comprehensive assessment of the child. Finally, Mercer claims that SOMPA accomplishes nondiscriminatory assessment because differences among sociocultural groups do not exist on some measures (ABIC and Health History Inventory), or the differences are removed with pluralistic norms (WISC-R). The rationale for these procedures as well as a description of the standardization of the instruments is provided by Mercer (1979).

It is important to recognize certain underlying assumptions which, though not explicit in the SOMPA Technical Manual, are very much apparent in Mercer's writings. Mercer appears to be a strong advocate of Social Deviance theory which, stated simply, suggests that the formal labeling process creates deviant behavior rather than deviant behavior creating the label (Becker, 1963; Gove, 1980). Mercer's conception of mental retardation appears to be consistent with traditional, pre-1960 conceptions of mental retardation. An explicit purpose of SOMPA is to distinguish between "true" and pseudo retardation. "True" mental retardation is viewed as being related to a biological anomaly, as permanent, and as comprehensive, i.e., the person is incompetent in most if not all social settings and social roles. However, as noted earlier, the AAMD conception of mental retardation for the past twenty years has emphasized current status with no implications for etiology or prognosis. Mental retardation is seen from a Social System perspective where, according to Mercer, formal classification (labeling) <u>should</u> be avoided if at all possible. Mercer assumes that special education classification has negative effects in part due to the labeling phenomenon as well as the implicit assumption that special education programming for the mildly retarded is largely ineffective.

The assumptions about labeling and the ineffectiveness of special education, particularly self-contained special classes for the mildly retarded, are difficult to evaluate. Courts, undoubtedly influenced by Mercer, seem to have accepted these assumptions in several cases. In view of these assumptions, it seems somewhat surprising that the emphasis so often has been on the assessment process used prior to placement rather than the effects or outcomes of classification and placement. If the labels and programs are as bad as alleged, and these criticisms are probably overdrawn, it seems inappropriate to classify and place any child regardless of race or social status. On the other hand, if the programs are effective in enhancing important academic and social competencies, then the classification (label) risks would seen justifiable for the individual, and fairness from the perspective of composition of groups would be irrelevant. In either case, assessment instruments and procedures used during the preplacement evaluation are not the most important influence on fairness and usefulness of classification or programs either for individuals or groups. Nevertheless, the principal concern in Mercer's work, several court cases, and recent Federal legislation, has been the assessment instruments and procedures.

Adaptive Behavior Inventory for Children. The Adaptive Behavior Inventory for Children (ABIC) was developed by Mercer and her associates to provide a comprehensive measure of the child's functioning in various social roles and social settings. There are 242 items on the ABIC which are organized around six domains of behavior. A composite score is computed which is the average of the child's scores on the six subscales. The ABIC domains and sample items are provided in Table 1.

Most of the ABIC items were selected on the basis of intensive interviews with mothers of children between the ages of 5 and 11. An item pool of 480 questions was reduced to 252 questions on the basis of a questionnaire study. These 252 items were adminstered to a standardization sample. Ten items were deleted resulting in 242 items in the final published version. Most items are age graded. The ABIC is administered as a structured interview with a basal and ceiling procedure used to identify the sample of items that are most appropriate for each child. The primary caretaker of the child, typically the mother, is the preferred respondent. For each item the mother chooses among three possible responses.

The norms for the ABIC are based upon a very carefully selected random sample of school age children in California between the ages of 5 and 11. The sample was stratified on the basis of ethnic-racial group (white, black, and Hispanic), size of community, gender, and age. Standard scores with the mean of 50 and a standard deviation of 15 are provided for each domain. The average of these standard scores is used as a composite or global index of adaptive behavior. In addition, three other scores are provided. The Veracity scale attempts to detect a fake good response set. The No Opportunity and Not Allowed responses are seen as an indication of the amount of restriction placed on the child. Finally, the Don't Know responses are viewed as an indication of the amount

Table 1

SAMPLE ITEMS FROM THE ABIC

Domain	Item
Family	147. When ___ cannot have what he/she wants immediately, how often does he/she get angry and fuss about it? 0 most of the time 1 sometimes, or 2 almost never
Community	142. When visiting relatives or friends outside the neighborhood, does ___ usually 0 go with an older person 1 go with children his/her own age, or 2 go alone?
Peer Relations	144. How often does ___ meet and play with his/her friends at a special place like a vacant lot, a park, the street, the school bus stop, or a courtyard? 1 sometimes 0 seldom or never, or 2 often
Non Academic/School	132. How often does ___ take his/her school supplies and books to school without being reminded? 1 occasionally 0 seldom, or 2 regularly
Earner/Consumer	140. Does ___ make correct change for a dollar 2 without help 1 only with help, or 0 not at all?
Self-Maintenance	143. Does ___ order food at a restaurant 2 without help 1 with some help, or 0 does someone order for him/her

of knowledge the respondent has about the child's activities. If critical values are exceeded on the three ancillary scales, interpretation of the other scores is not recommended.

In many ways the ABIC is the best of the current adaptive behavior instruments in terms of providing information useful in classification/placement decisions. It is the only instrument presently available that was designed from the beginning stages of item selection to final standardization for use with normal, borderline, and mildly retarded children. The face validity of the items in the various domains appears to be excellent. The type of derived scores are appropriate for use in classification/placement decisions.

A number of limitations in use of the ABIC exists at the present. First, there is the problem concerning the generalizability of the California ABIC norms to other locations such as Iowa. Second, it is important to emphasize that the ABIC does not provide information on the child's academic performance. The one domain on the ABIC which might appear to provide this sort of information, nonacademic school, does not provide information on how well the child is doing in various academic roles. The information provided on this scale has to do with the parents' perception of the kinds of activities in which the child engages in the classroom or other settings, or roles that might be related to classroom performance. A third problem with the ABIC has to do with the emphasis upon activities rather than competence. A large majority of the ABIC items ask how <u>often</u> a child does something with responses provided such as frequently, always, or never. This item format may provide information on the frequency of various activities, but provide little or no information on how <u>well</u> the child performs. Finally, there have been no studies to date providing supportive information on the validity of the ABIC with relation to various external criteria. In contrast to traditional measures of social competence, the ABIC subscale and composite scores are largely unrelated to measures of cognitive competence (Oakland, 1980; Mercer, 1979; Kazimour & Reschly, 1981).

<u>SOMPA Sociocultural Measures</u>. The Sociocultural Measures (SCM) are used to determine the degree of similarity between the culture of the school and the culture of the child's home. The SCM are more sophisticated than traditional measures of socioeconomic status. The SCM are based on 22 questions (24 items) which are organized into 9 factors and 4 Sociocultural Modalities. The modalities, factors, and type of information gathered with the SCM are illustrated in Table 2. The SCM are administered to the primary caretaker of the child in an interview that also includes the ABIC and the Health History Inventory.

The items on the SCM were developed from a review of research concerning factors related to measured intelligence. The correlations of the factors and modalities vary within and between ethnic groups. The multiple correlations between the SCM and the WISC-R Full-Scale IQ score vary from .37 to .42 depending on group (white, black, or Hispanic) (Mercer, 1979, Table 44). Generally the two modalities with the highest

Table 2

SOMPA SOCIOCULTURAL MEASURES

Modality	Factor(s)	Type of Information
1) Family Size	1) Family Size	Number of persons in the household
2) Family Structure	2) Parent-Child Relationship	Biological relationship of child to primary caretakers
	3) Marital Status	Gender of head of household, marital status of mother or mother substitute
3) Socioeconomic Status	4) Occupation	Duncan Index of Occupation
	5) Source of Income	Primary support for family
4) Urban Acculturation	6) Sense of Efficacy	Agree-Disagree statements on what determines success, value of planning, and delay of gratification
	7) Anglicization	Educational level of parents, geograhpic location where parents were raised, and rating of respondent's use of English
	9) Urbanization	Population of place where parents were raised

correlations for all groups are Socioeconomic Status and Urban Acculturation. The correlations for the Family Structure and Family Size modalities generally are considerably lower and more variable across the groups.

Mercer (1979) argued that to correct the biases in IQ tests, pluralistic norms should be used when three characteristics of a population are identified. These characteristics are: 1) Significant differences among groups on measures of intelligence, 2) Significant differences among groups in sociocultural characteristics, and 3) Sociocultural characteristics account for a significant amount of the variation in measured intelligence within and between groups. These criteria were met using the SCM and the WISC-R in the three samples in the SOMPA standardization sample and, as will be reported later, for samples of black and white students in Iowa.

SOMPA Estimated Learning Potential. The SOMPA Estimated Learning Potential (ELP) is the procedure developed by Mercer to correct the alleged biases in intelligence tests. Mercer contends that conventional scores on instruments such as the WISC-R reflect numerous sources of cultural bias when used with children who are culturally different. Mercer suggests that these conventional scores, which she renames as School Functioning Level (SFL), should be modified in view of the sociocultural differences. In SOMPA the Sociocultural Measures are used to assess these differences.

The concept of pluralistic norms or the idea of taking into account sociocultural background in interpreting intelligence test results is not entirely new. On a logical basis, many have argued for years that intelligence test results mean a different thing if the child is from a non-middle class environment. This generalization would hold regardless of race or ethnic group. Much of this discussion, however, appears to be predicted on the notion that intelligence test results reflect innnate ability. Recent thinking in this area has recognized increasingly that intelligence test results are not measures of innate ability for any person regardless of race, ethnicity, or social class.

The ELP procedure used in SOMPA appears to be fairly complex. It rests upon a simple idea. The idea is that children should be compared with other children who are similar in cultural background and, presumably, opportunities to learn the competencies required on the test. The steps in developing an ELP score for an individual child are the following:

1) The WISC-R is administered using standard procedures. The Verbal, Performance, and Full Scale IQ scores are obtained. As noted earlier these scores are called School Functioning Level (SFL).

2) The scores on the four modalities from the SOMPA Sociocultural Measures are obtained.

3) A multiple regression equation is used to determine a predicted intelligence test score for the child. The equation derived for black

students in the SOMPA Standardization is provided below as an example.

$$\text{Predicted Verbal IQ} = 79.13 - .54F.SZ.+.24F.ST.+.38SES+.17UA$$

4) The predicted score for an individual black child would be based on the equation above and the four scores from the Sociocultural Measures. For example, if the child's score on the Sociocultural Measures were: Family Size (FSZ) = 10; Family Structure (FST) = 10; Socioeconomic Status (SES) = 3; and Urban Acculturation (UA) = 40, the predicted WISC-R Verbal IQ would be 84.
Predicted Verbal IQ = 79.13-(.54)(10)+.24(10)+(.38)(3)+(.17)(40)

5) If the predicted score is greater than 100, the ELP score is the same as the conventional WISC-R IQ score.

6) If the predicted intelligence score is less than 100, in the example above it was 84, then the ELP score is derived according to the following formula.

$$ELP = 100 + 15 \left(\frac{\text{Obtained IQ} - \text{Predicted IQ}}{\text{SEestimate}} \right)$$

Note. The SEestimate for black students in the SOMPA Standardization sample was 12.82.
For example, if the child conventional WISC-R Verbal IQ score was 75, the ELP would be

$$100 + 15 \left(\frac{75 - 84}{12.82} \right) \text{ or } 89$$

If the conventional WISC-R Verbal Score was 90, the ELP would be

$$100 + 15 \left(\frac{90 - 84}{12.82} \right) \text{ or } 107$$

It should be noted that the child's ELP score is always equal to or greater than the conventional score. The formula that is used in step six to determine the ELP score is a general formula which can be used to transform any set of scores from one score scale to another. This particular formula insures that the mean IQ score for any group is equal to 100 with a standard deviation of about 15. The ELP procedure insures that differences in mean IQ scores among various groups are greatly reduced and, depending on the group, eliminated.

The ELP does provide a systematic way to take sociocultural factors into account in the interpretation of intelligence test scores. There are several problems with this procedure, including basic questions of reliability and validity. One problem addressed in this study had to do with the generalizability of the California norms for the sociocultural measures and the accuracy of the regression equations published in the SOMPA Manual for other populations.

Summary on SOMPA. Despite the recent publication date for SOMPA, considerable debate and surprisingly widespread use of this procedure has already occurred. Some of the problems with SOMPA, including Mercer's

assumptions about mental retardation and special education, have been discussed in this section. The overall question concerning SOMPA has to do with whether it will enhance educational opportunities for children. SOMPA in its present form is principally a method which provides the possibility of a more refined classification system. The information provided is not of an educational programming nature. Nearly all of the information in SOMPA has to do with the child's background, developmental history, non-school activities. In other words, the information is not related to specific educational skills or abilities. The overall question which needs to be addressed is the educational relevance of the information provided through use of SOMPA.

METHODOLOGY

Between October, 1978 and March, 1979 various preliminary activities in preparation for the Iowa Assessment Project were completed. These included the development of various forms, e.g., parent permission, the development of instruments for recording and summarizing data and so on. The sample was selected through use of information from the Iowa Department of Public Instruction. An endorsement of the project from Dr. Benton, State Superintendent, was obtained and sent to superintendents of school districts selected in the sample. Building principals were contacted to obtain permission to select children in specific classrooms. Two training sessions were held for AEA personnel in order to insure that people would be available to administer and score the SOMPA instruments.

Sample Selection

Due to limitations in resources it was decided to select a random sample of 200 third grade students, 100 white and 100 black. The original intent was to select a third sample of Hispanic children, but for a variety of reasons, the third sample portion of the study was not completed. The reason for the choice of third grade students was that these students are near the middle of the SOMPA age range of five to eleven. The implicit assumption made in the selection of third grade students was that if the SOMPA norms were applicable to this age group, then it is highly likely that the norms would be applicable to other students close in age.

A very strong emphasis was placed upon obtaining a random sample that would be representative of students in Iowa. The strategy adopted was to select students from each Area Education Agency in proportion to the number of students in the Area Education Agency in relation to the total student population in Iowa. In Table 3 the percentage of students in each Area Education Agency is provided along with the number of students selected from that AEA for the Iowa Assessment Project. White students were selected from all Area Education Agencies. Selection of black students was restricted to those Area Education Agencies with two percent or more of the total black student population in the state.

Table 3

WHITE SAMPLE

	Per Cent[a]	No.[b]		Per Cent[a]	No.[b]
AEA 1	7.4	7	AEA 9	10.9	10
AEA 2	4.7	7[e]	AEA 10	11.6	11
AEA 3	2.8	3	AEA 11	19.8	19
AEA 4	2.2	2	AEA 12	6.0	6
AEA 5	5.6	6	AEA 13	6.4	7
AEA 6	3.7	4	AEA 14	2.5	2
AEA 7	7.4	7	AEA 15	5.1	5
			AEA 16	3.8	4

BLACK SAMPLE

	Per Cent[c]	No.[d]		Per Cent[c]	No.[d]
AEA 1	1	0	AEA 10	9	10
AEA 2	1	0	AEA 11	37	37[e]
AEA 3	0	0	AEA 12	3	3
AEA 4	0	0	AEA 13	1	0
AEA 5	3	4	AEA 14	0	0
AEA 6	1	0	AEA 15	1	0
AEA 7	19	21	AEA 16	4	5
AEA 9	19	20			

a. The percent of the total Iowa student population in the AEA.
b. The number of white students selected in the AEA.
c. The percent of the total Iowa black student population in the AEA.
d. The number of black students selected in the AEA.
e. Includes two students from self-contained special education classes.

Two students for each sample were selected from self-contained special education classes. At the time the study was conducted approximately two percent of all school age children in Iowa were in self-contained special education classes, and would therefore not appear on regular classroom enrollment rosters.

The sampling strategy used insured that all white third grade students in the state of Iowa had an equal chance of being selected to participate in the study. Due to very low percentages and very low numbers of black students in several of the AEA's, the black sample was selected from those AEA's which had two percent or more of the black student enrollment in the state. The AEA's excluded, AEA's 1, 2, 3, 4, 6, 13, 14, and 15, all had very low percentages and very low numbers of black students. In some instances, it was entirely possible that there would not have been a single black third grade student in a particular AEA. For example, this very well may have been the case in AEA 3 where there apparently were only six black students over the elementary grade levels of kindergarten through sixth grade. Exclusion of the AEA's that had less than 2 percent of the total black student population resulted in eliminating only 5 percent of the total black student population in Iowa from possible selection in the sample. Thus, the black sample was selected from school districts and AEA's which had 95 percent of the total black enrollment in the state.

The strategy used to select specific children was as follows. A printout from the Basic Educational Data Survey of the Iowa Department of Public Instruction which had information regarding all third grade classrooms in the state was used. For each AEA, the appropriate number of third grade classrooms was selected randomly. The gender of the child to be selected from that classroom was then determined randomly. The final instruction then was to select a child of a certain gender according to a random procedure. This instruction typically was in the form of, "select the third male counting from the top of the list," or "select the tenth female counting from the bottom of the list."

The Supervisor of School Psychological Services in each AEA assumed responsibility for coordinating sample selection and data collection activities. The sample selection procedure, including the name of the school district, the elementary classroom, and the procedure for selecting a specific child in the classroom, was provided to the Supervisor of School Psychological Services by the project coordinators. The supervisors then contacted district superintendents and building principals for permission to collect data on specific children. Once permission was obtained the child was selected according to the directions provided by the project coordinators. As soon as a specific child was identified, the parents were contacted, often first by phone and then always by letter. Parent's permission for inclusion of each child in the study was obtained in writing.

Once parent permission was obtained, data were collected through administration of individual assessment procedures at the school, through

the child's teacher completing a brief survey on achievement, through searching the child's school records, and through a home interview. The Wechsler Intelligence Scale for Children-Revised (WISC-R) was administered to each child in both samples. The WISC-R was administered, usually by fully certified school psychologists employed by the AEA or, in a few instances, by graduate students from Iowa State University who had completed a practicum in the administration, scoring, and interpretation of the WISC-R. Home interviews in which the SOMPA, ABIC, and SCM data were obtained were conducted by AEA personnel, sometimes social workers, sometimes school psychologists, and occasionally by the Supervisor of School Psychological Services. In all cases, the persons who conducted the home interview were trained in the administration of these instruments either at the training session held for the Iowa Assessment Project in February, 1979, or through training provided by the Supervisors of School Psychological Services or Social Work Services in the AEA's.

Nearly all of the data were collected between March and June of 1979. Some of the remaining cases were completed during the 1979-80 school year. The final case was submitted to the project coordinators in August of 1980.

If parent permission could not be obtained for a child selected initially, an alternate random sampling procedure was provided by the project coordinators. We do not have precise data on the percentage of students whose parents provided permission, or the number of alternate students that had to be selected. In surveying informally the Supervisors of School Psychological Services, it appears that a very high percentage of the initial sample of parents of white students provided permission, something in the neighborhood of 80 or 90 percent. The percent of parents of the initial sample of black students who provided permission was not quite as high, but somewhere in the range of 65 to 75 percent.

When all data had been collected in the AEA, the completed protocols were sent to the project coordinators at Iowa State University for data coding and analysis.

RESULTS AND DISCUSSION

Results from the project and comparisons of Iowa data with other samples are presented in this section. The presentation is organized around the three major questions considered, i.e., Mean ability levels in Iowa; Generalizability of ABIC norms to Iowa; and Generalizability of the SOMPA Estimated Learning Potential procedure to Iowa.

Ability Level in Iowa

In Table 4, means and standard deviations for the samples of white and black students are presented. Results also are included from two other samples, the SOMPA standardization sample (Mercer, 1979, p. 129) and the WISC-R standardization sample (Kaufman & Doppelt, 1976, p. 167).

Table 4

WISC-R MEANS AND STANDARD DEVIATIONS FOR
IOWA, CALIFORNIA, AND NATIONAL SAMPLES

WISC-R Scale		WHITE IA N=100	WHITE CA N=604	WHITE National N=1870	BLACK IA N=100	BLACK CA N=456	BLACK National N=305
Verbal	Mean	108.34	102.0	102.01	94.63	88.7	87.81
	S.D.	15.03	14.7	-	13.58	13.5	-
Performance	Mean	109.99	103.8	102.15	95.72	90.0	87.16
	S.D.	15.36	13.8	-	12.18	12.8	-
Full Scale	Mean	110.04	103.1	102.26	94.66	88.4	86.43
	S.D.	15.15	14.1	-	12.16	12.5	-

Notes: CA means for white and black children are from Mercer, 1979. p. 129. National means for white and black children are from Kaufman and Doppelt, 1976, p. 167.

The WISC-R means for the Iowa sample of white students were significantly higher than the SOMPA sample and the national standardization sample. The Iowa sample was 8 to 10 points higher than the population mean of 100, or one-half to two-thirds of a standard deviation above the population mean. The differences among the three samples of white students were slightly smaller, about 6 to 8 points or one-half of a standard deviation.

Similar results were obtained for the Iowa sample of black students. Again the means were significantly above the national population mean of 86 to 88 (depending on the WISC-R scale), and above the SOMPA standardization sample means of 88 to 90. However, the differences between black and white students within the respective samples were about the same. In Iowa, California, and nationally, samples of white students obtained WISC-R scores that were 13 to 15 points higher. Also, contrary to widespread beliefs, black students obtained nearly equal scores on the Verbal and Performance IQ Scales.

A tentative inference from this study is that the mean ability (academic aptitude) level among Iowa school age children is significantly above the national population average. This result appears to hold true both for white and black students in terms of comparisons to respective national population averages for each. This inference, of course, is based upon study of a relatively small sample of children selected from only one grade level. However, several other lines of evidence are consistent with the conclusion of higher ability and achievement among Iowa students.

As noted earlier, previous studies involving group ability tests administered to very large samples of Iowa students yielded similar results. These studies were conducted with a variety of group tests and large samples of students from several grade levels (Stroud & Showalter, 1959; Hieronymus & Stroud, 1969). Similar differences between the Iowa and the national populations are found on at least one achievement test, the Iowa Tests of Basic Skills, where Iowa third grade students typically obtain scores that are one-half to one standard deviation above national population averages. Other lines of evidence are consistent with the inference of higher achievement and ability in Iowa. For example, Iowa draftees have very low rates of rejection due to low scores on the military classification tests (cited in Heber, 1970), and the illiteracy rate is lower in Iowa than any other state. However, various indices of socioeconomic status in Iowa such as occupation, per capita income, and median education level are not appreciably different from national averages.

Usefulness of the Adaptive Behavior Inventory for Children

A second question addressed was the generalizability of the Adaptive Behavior Inventory for Children (ABIC) norms to a sample of Iowa students. For reasons discussed earlier, the need to assess adaptive behavior during the preplacement evaluation of students referred for special education services has increased as a result of litigation and legislation. Few choices exist now concerning selection of instruments. The ABIC is one instrument which is designed for mildly handicapped and normal children. However, all standardization data for the ABIC are based on samples of children from California.

The ABIC means and standard deviations for the California and Iowa samples of white and black students are presented in Table 5. Statistical tests were conducted for the six ABIC subscales, the ABIC Average Score, and for the three ABIC validity scales.

The ABIC means for the Iowa samples of black and white students also were compared through t-tests (data not shown). All comparisons were non-significant except for the ABIC Validity Scale of No Opportunity/Not Allowed (NO/NA). On this scale, which Mercer views as an index of the limits placed on the child's social role opportunities, Iowa white students obtained significantly higher scores ($t = 4.28$, $p < .001$), suggesting more limitations in white families on childrens' opportunities to engage in various social roles.

The answer to the central question of the generalizability of ABIC norms to white students in Iowa is fairly obvious from inspecting Table 5. The norms are surprisingly applicable to at least these samples of Iowa students. The ABIC average scores for Iowa and California samples of white students are virtually identical. Significant variations are apparent on only two of the subscales, Community and Self-Maintenance. In comparison to California data, Iowa white students had lower scores on Community and higher scores on Self-Maintenance.

Table 5

ANALYSIS OF ABIC DATA FOR CALIFORNIA AND IOWA SAMPLES

ABIC Scale	Sample	White IA	White CA	White t-test IAvsCA	Black IA	Black CA	Black t-test IAvsCA
Family	$\bar{X}$	48.1	47.7	0.24	49.7	53.1	-2.18*
	S.D.	14.3	15.4		14.6	14.2	
Community	$\bar{X}$	44.4	50.2	-3.60**	43.8	53.2	-5.71**
	S.D.	15.9	14.8		15.7	15.1	
Peer	$\bar{X}$	53.4	51.2	1.41	53.3	52.1	0.75
	S.D.	13.9	14.5		13.6	14.3	
Non-Academic School	$\bar{X}$	49.5	50.3	-0.47	47.6	51.8	-2.52*
	S.D.	13.7	15.1		16.0	15.2	
Earner/ Consumer	$\bar{X}$	49.9	50.1	-0.13	50.8	52.7	-1.23
	S.D.	15.1	15.4		14.1	14.6	
Self-Maintenance	$\bar{X}$	53.5	49.5	2.52*	51.7	52.9	-0.74
	S.D.	13.3	14.8		13.4	14.8	
ABIC Average	$\bar{X}$	49.7	49.9	-0.13	49.5	52.7	-2.28*
	S.D.	12.4	13.2		12.4	13.2	
Veracity	$\bar{X}$	0.69	----	----	0.84	----	----
	S.D.	0.87	----		1.03	----	
No Opportunity Not Allowed	$\bar{X}$	8.4	14.5	-5.94**	4.4	7.2	-2.70**
	S.D.	7.2	9.8		5.7	9.8	
Don't Know	$\bar{X}$	1.5	1.9	-1.20	1.9	2.2	-0.96
	S.D.	1.6	3.0		2.6	3.0	

* $p < .05$

** $p < .01$

Note: The Standard deviations on No Opportunity/Not Allowed and Don't Know for the California Samples were estimated from data presented by Mercer (1979, p. 109). The California data are from Mercer (1979, p. 105-113).

Comparisons of Iowa and California samples of black students suggested slight differences on several scales. Black students in California obtained higher scores on all the ABIC scales. The differences on the Family, Community, Non-Academic School and ABIC average were statistically significant. It should be noted that most of the mean differences were rather small, generally in the range of 3 to 4 points. Differences of this magnitude, although statistically significant, are unlikely to markedly influence use of the instrument in classification decisions.

Additional analyses of the appropriateness of specific items on the ABIC for Iowa students were seen as unnecessary, and have not been conducted. The reasoning was that if the summary scores which would be used in evaluating children are nearly the same, then additional analyses are not needed. Moreover, on the ABIC Validity Index of No Opportunity/Not Allowed, Iowa white and black students obtained lower scores suggesting that Iowa students have ample opportunities to engage in the activities reflected in the ABIC items. The item analyses would be expensive, time consuming, and unlikely to yield any marked differences.

If we make the reasonably tenable assumption that these results are accurate for third graders in Iowa, and generalizable to the other age levels from 5 to 11, then at least one question concerning the use of the ABIC in Iowa is settled. The ABIC norms are accurate for children in Iowa. Other questions concerning the conception of adaptive behavior which underlies the ABIC, and the effects of the ABIC on classification decisions, are discussed in a later section.

Generalizability of SOMPA ELP Procedure

The third question investigated in the project was the generalizability of the SOMPA Estimated Learning Potential (ELP) procedure to samples of white and black students in Iowa. As noted earlier, the ELP procedure involves using multiple regression analyses to determine the relationship of sociocultural data to measure intelligence. Different regression equations are used depending on the sociocultural group. The sociocultural data for the individual are put into the multiple regression equation for the appropriate group, e.g., white or black. If the resulting predicted score is 100 or higher, the ELP is seen as the obtained WISC-R score. If the predicted score is less than 100, the obtained WISC-R score is compared to the predicted score and an ELP score is computed according to the procedures described earlier. The ELP is always equal to or higher than the conventional WISC-R scores.

The California regression equations and norms will be appropriate for other samples if: 1) The means and distributions of the sociocultural measures are comparable; 2) The relationships among the sociocultural measures and the WISC-R scales are about the same; and 3) The means on the WISC-R scales for the samples are about the same.

Distributions of Sociocultural Measures. Data are presented in

Table 6 on the means and standard deviations of the SOMPA sociocultural modalities and factors.

Comparisons of Iowa white and black students produced significant differences on all of the sociocultural variables except for the Family Size Modality, and the Parent-Child Relationship and Community Participation Factors. These differences indicate that Iowa white students are more likely to be living with both biological parents in intact families; their families are more likely to be supported by income from jobs rather than public funds; and the jobs held are of higher status. White parents also indicated a greater perception of control over the environment; have a higher educational level; are more likely to use standard English; and are more likely to have been reared in a geographic location outside of the South. On one factor, Urbanization, the parents of black students obtained a significantly higher mean indicating that parents of white students in Iowa are more likely to have been reared in small towns or rural areas.

Comparisons of Iowa samples with California samples yielded only one difference for white students, but several differences for black students. Iowa and California samples of white students were virtually the same on all sociocultural modalities and factors except for the Urbanization factor. On this factor Iowa families were significantly lower suggesting that Iowa parents are more likely to have been reared in small towns and rural areas. The results for black students were considerably more variable. In comparison to California, Iowa black students obtained higher scores on some modalities and factors, e.g., Urban Acculturation and Anglicization, and lower scores on Family Structure and Marital Status. However, these variations between the California and Iowa samples of black students are unlikely to produce large differences in the ELP distributions. The differences are inconsistent such that higher scores on one measure would likely compensate for lower scores on another measure.

Relationship of Sociocultural Measures to WISC-R Scales. In Table 7 the correlations among the Sociocultural Modalities and WISC-R scales are presented. Generally, the correlations for the Iowa samples are in the same direction and magnitude as those for the California samples. For all groups, the Socioeconomic Status and Urban Acculturation modalities have the highest relationship with the WISC-R scales. The most important statistic is the Multiple R which reflects the overall relationship of the four sociocultural modalities with the WISC-R scales. Generally, this relationship was about the same or slightly stronger for the Iowa samples.

The three criteria suggested by Mercer to determine the need for pluralistic norms were met in the results presented thus far. Mean scores on the WISC-R were different for white and black students. White and black students differed on sociocultural variables, and the sociocultural variables were significantly related to WISC-R scores. Mercer's procedures for developing pluralistic norms, based on California samples, are examined in the next section.

Table 6

ANALYSIS OF SOMPA SOCIOCULTURAL MEASURES (SCM)

SCM Modality Factor		White IA	White CA	White t-test IAvsCA	Black IA	Black CA	Black t-test IAvsCA	t-test IA white vs IA black
FAMILY SIZE	$\bar{X}$	6.7	6.8	-0.34	6.7	7.8	-2.61**	-0.11
	S.D.	2.3	2.8		3.3	3.8		
FAMILY STRUCTURE	$\bar{X}$	16.1	15.2	1.77	9.8	12.2	-3.86**	9.55***
	S.D.	3.9	4.5		5.2	5.8		
Parent-Child Relationship	$\bar{X}$	5.5	5.4	1.13	5.2	5.1	0.72	1.56
	S.D.	1.3	1.5		1.7	1.8		
Marital Status	$\bar{X}$	10.6	10.0	0.63	4.6	7.2	-4.30**	9.82***
	S.D.	3.2	4.0		5.2	5.6		
SOCIOECONOMIC STATUS	$\bar{X}$	7.7	8.1	-1.48	4.8	4.8	-0.08	6.45***
	S.D.	2.7	2.8		3.6	3.4		
Source of Income	$\bar{X}$	2.8	2.8	0.62	2.0	2.1	-0.85	5.87***
	S.D.	0.6	0.6		1.3	1.3		
Occupation	$\bar{X}$	5.0	5.3	-1.12	2.8	2.9	-0.39	6.14***
	S.D.	2.3	2.5		2.6	2.3		
URBAN ACCULTURATION	$\bar{X}$	66.5	66.1	0.23	58.7	53.4	2.85**	4.22***
	S.D.	10.7	12.8		16.3	14.3		
Sense of Efficacy	$\bar{X}$	5.5	5.4	1.75	4.3	4.4	-0.32	5.51***
	S.D.	0.9	1.2		1.8	2.0		
Community Participation	$\bar{X}$	8.9	8.4	1.57	8.4	8.6	-0.83	0.91
	S.D.	3.1	3.6		3.2	3.8		
Anglici-zation	$\bar{X}$	49.8	48.6	1.34	42.0	36.6	4.06**	5.17***
	S.D.	7.4	10.8		13.5	12.0		
Urbani-zation	$\bar{X}$	2.3	3.9	-7.44**	4.0	3.9	1.02	-6.40***
	S.D.	1.6	1.7		1.8	1.8		

* $p < .05$

** $p < .01$

*** $p < .001$

Table 7

CORRELATIONS OF SCM AND WISC-R SCALES FOR IOWA AND CALIFORNIA SAMPLES

WISC-R Scale		Family Size		Family Structure		SES		Urban Accul.		Multiple R	
		CA	IA	CA	IA	CA	IA	CA	IA	CA	IA
V-IQ	White	-.11	-.18	.16	.13	.40	.43	.32	.34	.45	.48
	Black	-.19	-.22	.11	-.03	.20	.37	.26	.29	.32	.41
P-IQ	White	-.08	-.21	.10	.02	.28	.31	.17	.19	.30	.39
	Black	-.16	-. 6	.12	.01	.24	.20	.27	.26	.34	.27
FS-IQ	White	-.11	-.22	.15	.09	.39	.42	.29	.31	.42	.48
	Black	-.20	-.17	.13	.00	.25	.35	.30	.31	.37	.38

Table 8

MULTIPLE REGRESSION EQUATIONS BASED ON IOWA AND CALIFORNIA SAMPLES

White Samples

ELP-VIQ-CA = 74.40 - .42 FSZ + .37 FST + 1.56 SES + .19 UA	R = .45
ELP-VIQ-IA = 87.6 - 1.10 FSZ + .02 FST + 2.03 SES + .18 UA	R = .48
ELP-PIQ-CA = 90.08 - .36 FSZ + .23 FST + 1.15 SES + .05 UA	R = .30
ELP-PIQ-IA =107.91 - 1.49 FSZ - .22 FST + 1.87 SES + .02 UA	R = .39
ELP-FSIQ-CA= 79.77 - .42 FSZ + .32 FST + 1.50 SES + .14 UA	R = .42
ELP-FSIA-IA= 95.83 - 1.41 FSZ - .11 FST + 2.17 SES + .13 UA	R = .48

Black Samples

ELP-VIQ-CA = 79.13 - .54 FSZ + .24 FST + .38 SES + .17 UA	R = .32
ELP-VIQ-IA = 90.43 - .40 FSZ - .27 FST + 1.21 SES + .06 UA	R = .41
ELP-PIQ-CA = 78.32 - .33 FSZ + .18 FST + .58 SES + .17 UA	R = .34
ELP-PIQ-IA = 85.29 + .08 FSZ - .11 FST + .25 SES + .17 UA	R = .27
ELP-FSIQ-CA= 76.83 - .46 FSZ + .22 FST + .49 SES + .19 UA	R = .37
ELP-FSIQ-IA= 87.06 - .18 FSZ + .18 FST + .88 SES + .11 UA	R = .38

Notes. ELP denotes Estimated Learning Potential
VIQ, PIQ, and FSIQ denote WISC-R Verbal, WISC-R Performance, and WISC-R Full-Scale, respectively
CA and IA denote California and Iowa
The regression formulas for California are based on Mercer (1979, p. 131)

Comparison of Iowa and California Multiple Regression Equations

The multiple regression equations for both samples in Iowa and California are presented in Table 8. Although there are some obvious differences in the weights associated with various factors, the ELP distributions would not necessarily be different (see next section). For example, in the Iowa formula for white students more is subtracted for Family Size and more is added for Socioeconomic Status. Perhaps the most important difference is the intercept or constant which is considerably higher for the Iowa samples. The higher intercept is largely due to the higher mean scores of both Iowa samples in comparison to the respective California samples.

Comparison of ELP Scores Using Iowa and California Samples

In Table 9 data are presented on mean WISC-R scores using standard norms and sets of pluralistic norms based on California and Iowa samples. As can be seen through comparing column A with column B and C, the ELP score is always equal to or higher than the conventional score. For most white students in Iowa, the ELP and conventional scores are nearly the same, which also was the case in the California standardization sample. Since nearly all white students are predicted to obtain scores at the population mean or higher, the ELP procedure has little effect except for a few cases. Note that the average amount of change using either the California or Iowa formula was less than 2 points. However, significant changes in individual cases of up to 17 points were produced using an ELP procedure based on data for white students in Iowa.

The California ELP procedures clearly were less accurate for black students in Iowa. The Iowa formula produced an ELP mean of 100 which is what the ELP procedure is designed to accomplish (see column B). However, application of the California formula for black students to the Iowa sample of black students changed the mean of 106 to 107. In other words, the California formula corrects by too much when applied to the Iowa sample of black students. The most likely reason the California formula has this effect is the relatively higher WISC-R mean scores among blacks in Iowa. In a sense, there is less to adjust in the Iowa sample.

The average amount of change for black students produced by the Iowa ELP formula was 4 to 6 points. In contrast, the California ELP formula produced changes of 10 to 12 points on the average. In comparison to white students, a much greater percentage of black students had higher ELP than conventional scores, and the average amount of change was considerably larger.

The ELP procedure based on California data is largely unsuccessful for Iowa students, either black or white. The correction is rarely needed for white students, nearly all of whom are predicted to obtain scores of 100 or higher. The purpose of pluralistic norms and the ELP procedure is to eliminate differences in average scores on conventional, and presumably, biased measures of intelligence. Neither the California

or the Iowa ELP formula accomplished this purpose for the samples of white and black students in Iowa. In order to eliminate these differences for the present sample through construction of the ELP, a mean of about 110, rather than 100, would have to be used in Step 6 of the procedure described in the Background Section.

Table 9

COMPARISON OF IOWA SAMPLE ELP SCORES USING IOWA AND CALIFORNIA REGRESSION FORMULAE

WISC-R Scale	Sample	A Mean IQ	B Mean ELP-IA	C Mean ELP-CA	Mean B-A	Range B-A	Mean C-A	Range C-A
Verbal	White	108.3	108.7	110.1	0.34	0-13	1.81	0-17
	Black	94.6	100.7	106.1	6.02	0-19	11.40	1-23
Performance	White	110.0	110.1	110.4	0.08	0-08	0.44	0-10
	Black	95.7	99.9	106.5	4.23	0-15	10.78	0-25
Full Scale	White	110.0	110.2	111.3	0.20	0-12	1.24	0-16
	Black	94.7	100.1	107.1	5.44	0-19	12.36	0-28

Notes: In Column A, WISC-R means for the Iowa samples are provided using the standard norms.
In Column B, ELP means for the Iowa samples are presented using the Iowa regression formulae.
In Column C, ELP means for the Iowa samples are presented using the California (SOMPA Standardization) formulae.

Possible implications of these results for assssment practices and educational programming in Iowa are discussed in the following section.

POLICY IMPLICATIONS

The results of this project have implications for State of Iowa policies concerning mental disabilities classification, assessment procedures, and educational programming. These data, like any other data, do not suggest or dictate specific alternatives or choices. These data as well as data from other sources should be considered as decisions are made about classification criteria, assessment procedures, and educational programs.

Criteria for Mental Disabilities Classification

The procedures and criteria used in Iowa to classify children as mentally disabled have been the source of considerable discussion in recent years. The Iowa classification system for mental disabilities is similar to a previous version of the American Association on Mental Deficiency (AAMD) Manual on Classification and Terminology (Heber, 1961). For all intents and purposes, the Iowa classification criteria are similar to the 1961 AAMD classification scheme. The unique feature of practices in Iowa, in contrast to other states, is the inclusion of a category which now is referred to as minimal mental disabilities which is very similar to the category of borderline mental retardation specified in the 1961 AAMD Manual. The basic question has to do with the inclusion of the borderline group, often defined as functioning on intelligence tests in the range of -1 to -2 standard deviations below the mean, within the overall classification of mental disability or mental retardation. Apparently, other agencies such as the Federal Office for Civil Rights have raised questions about the appropriateness of the borderline category in the Iowa special education classification system.

Discussions of this issue often ignore the fact that classification criteria in mental retardation vary considerably from state to state. One of the clearest areas of variation among states is in the criterion used to define the highest level on intelligence tests that can be used in classifying a student as mentally retarded. Many states, like Iowa, are using an IQ cut-off score that is inconsistent with the more recent versions of the AAMD Manual (Grossman, 1973, 1977). The 1973 and 1977 revisions of the AAMD Manual suggest the criterion of 2 standard deviations or more below the mean on an intelligence test for classifying persons as mentally retarded. However, only 15 states presently use a cut-off score of 69 or 70. Other states either do not specify IQ cut-off scores (12 states) or use a score above the AAMD recommendations. The most commonly used alternative to the AAMD criterion is the cut-off score of 75 which is used by 15 states. Other variations are fairly common, for example, five states use a cut-off score of 79 or 80, two states use a cut-off score of 77, one state uses a cut-off score of 73, and, of course, one state (Iowa) uses the cut-off score of 85. Although the state of Iowa uses the highest cut-off score in the nation, it should be noted that wide variations from the current AAMD Classification Manual are common around the United States (Patrick & Reschly, 1981).

Although the Iowa classification criteria for mental disabilities are inconsistent with recent AAMD revisions, there appear to be two justifications for the higher IQ cut-off score in Iowa. First of all, our mental retardation prevalence is not markedly out of line with the national average. It is likely that lowering the IQ cut-off score in Iowa to the -2 standard deviation criterion would lead to a massive reduction in the number of children included in special education programs for the mentally disabled. No data on this issue are available from this project, but such data should be fairly easy to obtain through a review of the preplacement evaluation records for students currently placed in programs for the mentally disabled.

The most important justification for use of a higher IQ cut-off score in Iowa is the higher average of Iowa students on measures of intelligence and ability. A major finding of this project was that both white and black students in Iowa obtained scores that are significantly above the respective national population averages for each group. The mean ability level for white students in Iowa is about 110, or approximately 2/3rds of a standard deviation above the national population mean. As noted earlier, this result is consistent with other studies of school age children in Iowa. Applying these results to mental disability classification criteria leads to recognition of the fact that a child with an IQ of 85 in Iowa is approximately 1 2/3rds standard deviation below the mean. In other words, a child with an IQ of 85 is functioning at about the same level in comparison to other students in Iowa as a child with an IQ of 75 in other states. The IQ cut-off score of 75 which is about 1 2/3rds standard deviations below the mean (depending on the standard deviation for the test) is commonly used as a classification criterion throughout the United States. In the sense of relative status of students, the Iowa classification criteria are not out of line with classification criteria used widely in other states.

The use of a higher IQ cut-off score in Iowa is associated with several disadvantages. First, the higher cut-off score has attracted the attention of compliance review teams from the Office for Civil Rights. Representatives of the Office for Civil Rights have expressed concern about the use of the higher cut-off score in Iowa, altough these concerns have not been directed toward alternatives which might be used to better serve children who presently are placed in mental disabilities programs. Another disadvantage of the higher cut-off score in Iowa is the seemingly anomalous situation whereby a child can move across state lines and change special education classification. For example, a child might simply move from Missouri to Iowa and change from the classification of learning disability to mental disability. This problem is not unique either to Iowa or to the category of mental disabilities. In fact, the criteria used by states in the three most common mildly handicapping areas, educable mental retardation, learning disability, and emotional disability, vary considerably. However, the change from some other category to mental disability may be less acceptable to parents because of the relatively greater amount of stigma associated with the terms mental disability or mental retardation.

In any discussion of classification criteria, consideration of optimal educational programming for students who are having severe academic difficulties must be the primary concern. The critical issue is whether children who are functioning in the range of 70 or 75 to 85 on an intellectual measure are better served in regular education programs or in special education programs. It is recognized, of course, that not all students who function within this range are referred for, or are determined to be eligible and in need of special education programs. However, the critical issue is whether these students will be eligible for special education programming in the future. Some of the concerns of external agencies, particularly the Federal Office for Civil Rights, will be mitigated if children who perform in the 70 or 75 to 85 range are placed in

special education programs which involve a considerable amount of participation within regular education. The use of less restrictive environments such as resource options and special classes with maximum integration would in all probability satisfy many of the concerns of the Federal Office for Civil Rights. However, it must be recognized that simply changing the classification criteria will not solve the educational problems presented by students in Iowa who function in this borderline range.

Assessment of Adaptive Behavior

The ability to cope with the everyday demands of life have been fundamental to conceptions of mental retardation from the very beginnings of scientific and educational work with this population. The term adaptive behavior has been used for the past two decades to refer to this very essential aspect of mental retardation. It is important to note that although the term adaptive behavior is of relatively recent origin, emphasis on practical coping skills in discussions of mental retardation has existed for a couple of centuries. The term which served as a forerunner for the present concern with adaptive behavior was social competence.

A variety of influences have combined over the past decade or so to establish greater emphasis on the dimension of adaptive behavior in mental retardation classification. Implicitly, adaptive behavior, or the emphasis on practical coping skills, has always been fundamental to educational programming with the mentally retarded. Special class curricula for the mentally retarded have always placed a great deal of emphasis on the development of competencies in practical everyday situations. The increased concern in recent years over adaptive behavior originates, however, from issues related to classification of children as mentally retarded, not from educational programming considerations.

The basic issue has been with the overrepresentation of minority students in special education programs for the mentally retarded. This overrepresentation, which some regard as placement bias, has been the subject of extensive litigation, legislation, and Office for Civil Rights activities. In each of these arenas, adaptive behavior has been seen as a partial or even total solution to the issue of overrepresentation of minorities in special education programs. Recent court decisions as well as federal legislation have provided rather sweeping mandates that adaptive behavior must be assessed systematically and considered carefully during the preplacement evaluation.

The conception or the meaning of adaptive behavior becomes critical to efforts designed to meet the spirit and intent of recent litigation and legislation. The term adaptive behavior was first used in the 1961 revision of the AAMD Classification Manual. In this version, adaptive behavior was presented as a subordinate dimension of mental retardation with intelligence clearly indicated as the principal dimension. The 1961 revision provided different criteria for judging adaptive behavior depending on the age of the individual For the present discussion, the

most important part of the 1961 conception was the near exclusive reliance on academic performance as the criterion for adaptive behavior during the school age years. In fact, this particular conception of adaptive behavior for school age children suggested rather clearly that classroom performance and scores on standardized tests of achievement were the primary considerations in assessing adaptive behavior with school age children.

During the 1970's, research by Jane Mercer and revisions in the AAMD Manual led to a broadened conception of adaptive behavior for school age children. As noted earlier in this report, Mercer's work in the Riverside, California public schools led to greater emphasis on adaptive behavior as a classification criterion, and a conception of adaptive behavior which placed total reliance on the assessment of coping skills outside of the school environment. Both the 1973 and 1977 revisions of the AAMD classification system continued the use of different criteria for judging adaptive behavior depending on the individual's age. However, the AAMD system in the 1970's placed equal emphasis on adaptive behavior and intelligence, and broadened the conception of adaptive behavior for school age children. In the current AAMD system, adaptive behavior for school age children still includes academic performance, classroom adjustment, standardized test results, etc. There also is emphasis on performance outside of the school environment. It is this broadened conception of adaptive behavior which has not been well implemented in assessment work in public school settings throughout the United States.

Perhaps the most important reason accounting for the low level of implementation of the recently expanded conception of adaptive behavior is the current status of technology for measurement of adaptive behavior. Adaptive behavior scales useful for the mildly retarded and borderline populations with appropriate psychometric characteristics for classification decisions simply have not been available to date. A review of these instruments and the problems associated with the measurement of adaptive behavior is beyond the scope of this report. The interested reader is referred to Reschly (1981). A recently published scale, the Adaptive Inventory for Children (ABIC), is the closest approximation presently available to the kind of instrument that is needed to assess the student's coping skills outside of school. One of the purposes of this study was to determine the degree to which the Adaptive Behavior Inventory for Children norms are applicable to school age children in Iowa.

Results presented in a previous section suggest rather clearly that the Adaptive Behavior Inventory for Children norms are generally appropriate for students in the state of Iowa. Any problems associated with use of this instrument in Iowa are not attributable then to generalizability of the California norms to Iowa students. However, a number of other problems might be anticipated with widespread use of the ABIC with school age children in Iowa.

The most important problem associated with use of the ABIC has to

do with the conception of adaptive behavior upon which it is based. Mercer's (1979) conception of adaptive behavior does not include the academic setting or the student role performance. This, of course, might be appropriate for preschool or adult age groups. In view of the importance of the academic setting and the student role for school age students, the absence of this domain of behavior in the ABIC must be recognized as a serious limitation. The academic setting and the student role is extremely important for school age children regardless of sociocultural group. A comprehensive assessment of adaptibe behavior cannot therefore be accomplished through simple or direct applications of the ABIC. Other sources of information, particularly in relation to the child's performance in the school, must be considered.

In addition to limited conception, another major problem has recently been identified with the use of the ABIC. The results of three studies concerning the effects of the use of the ABIC on classification decisions now are available. The first study was conducted by Fisher (1978) and elaborated on by Scott (1979) using data from the Corpus Christi, Texas public schools. In 1978, Fisher reported that a very high percentage of students currently classified as mildly retarded would no longer be eligible for this classification if a significantly subaverage ABIC score was required concurrent with existing classification criteria. This declassification effect identified by Fisher was not restricted to minority group students. In fact, well over half of all white students as well as 60 to 70% of black and Hispanic students were declassified when the requirement was established that the child obtain an ABIC average score of 2 standard deviations or more below the mean. It is important to note that the classification criteria used in the original placement of the students in the Corpus Christi, Texas public schools were quite stringent, e.g., a 2 standard deviations criterion was used on intelligence as well as stringent criteria on academic achievement. In 1979, Scott reported a more comprehensive study of the students who were declassified. Careful examination of the records of these students suggested that about one-half of them could be placed in other special education classifications and programs, although this involved bending the rules to a considerable degree. However, at least half of these students were not eligible for any other kind of special education classification or program. The obvious questions are, what is the appropriate educational service for these children, and are these children served best by being declassified? A second study was conducted by Rhonda Talley (1979) in the Pueblo, Colorado public schools. Talley examined all the new referrals in this school district for children between the ages of 5 and 11 years during a single school year. Of the over 300 referrals, only 48 obtained WISC-R scores below 70 which was the IQ criterion for classifying children as mentally retarded. Other measures studied in addition to the WISC-R included the SOMPA, ABIC, and ELP. Use of the ABIC led to the decision that the vast majority of the 48, who would have been eligible according to traditional criteria, were not eligible for the classification of mental retardation. The ELP score also had some effect toward declassifying students, but by far the greatest effect was associated with application of the ABIC. The third study

(Reschly, 1981) was conducted with the Pima County Prevalence Study data. This study involved a large sample of students from four sociocultural groups: white, black, Hispanic, and Native American Papago. Again, it was apparent that direct application of the ABIC would, for all intents and purposes, eliminate the population of mildly retarded students. To put it differently, virtually no student regardless of sociocultural group, obtains low scores both on intellectual measures and the ABIC. One case from the Iowa Assessment Project further illustrates the possible effects of using the ABIC on classification decisions. As noted earlier, two students in each of the samples were selected from special education special class programs. One student with a WISC-R Full Scale score in the mid 60's had an ABIC composite score that was near the population average. The educational achievement of this particular student was far below age and grade level expectations. Again, application of the ABIC to this particular classification decision would lead to placement of the student in a regular education program which, presumably, would not meet her needs.

Although the Iowa Assessment Project data indicate that the ABIC norms are usable in Iowa, many other questions concerning the conception, measurement, and use of adaptive behavior remain to be resolved. Many of these issues are addressed in a special report developed by the Iowa Department of Public Instruction, Division of Special Education (Sargent, 1980). This report presents the findings of a task force on adaptive behavior. However, the critical issues with respect to adaptive behavior, conception, measurement, and use in classification decisions, must be considered by Area Education Agencies and individual practitioners. Perhaps the most noteworthy feature of the task force report is their emphasis on the use of adaptive behavior information in making decisions about special education program options. This report implicitly suggests that adaptive behavior for school age children must consider at least two major domains of behavior. These domains are the school social setting and the out of school social setting. The kind of classification used and the preferred special education option should be matched with information on the child's coping skills in both settings. The tables that accompany this section of the report present a scheme whereby information over these settings might be used in classification and selection of special program options.

Assessment of Sociocultural Status

Recent Federal Rules and Regulations and litigation reflect the long standing concern in special education that children should not be identified as handicapped due simply to cultural differences in accepted or expected patterns of behavior. The Protection in Evaluation Procedures Provisions of PL 94-142 are fairly explicit on this issue with the requirement that social and cultural background be considered carefully during the preplacement evaluation. The concern about the sociocultural differences is important with several of the mildly handicapping conditions including mild mental retardation, learning disabilities, emotional disabilities, and speech and language disabilities. Although a concensus has been reached concerning the importance of recognizing cultural dif-

Table 10

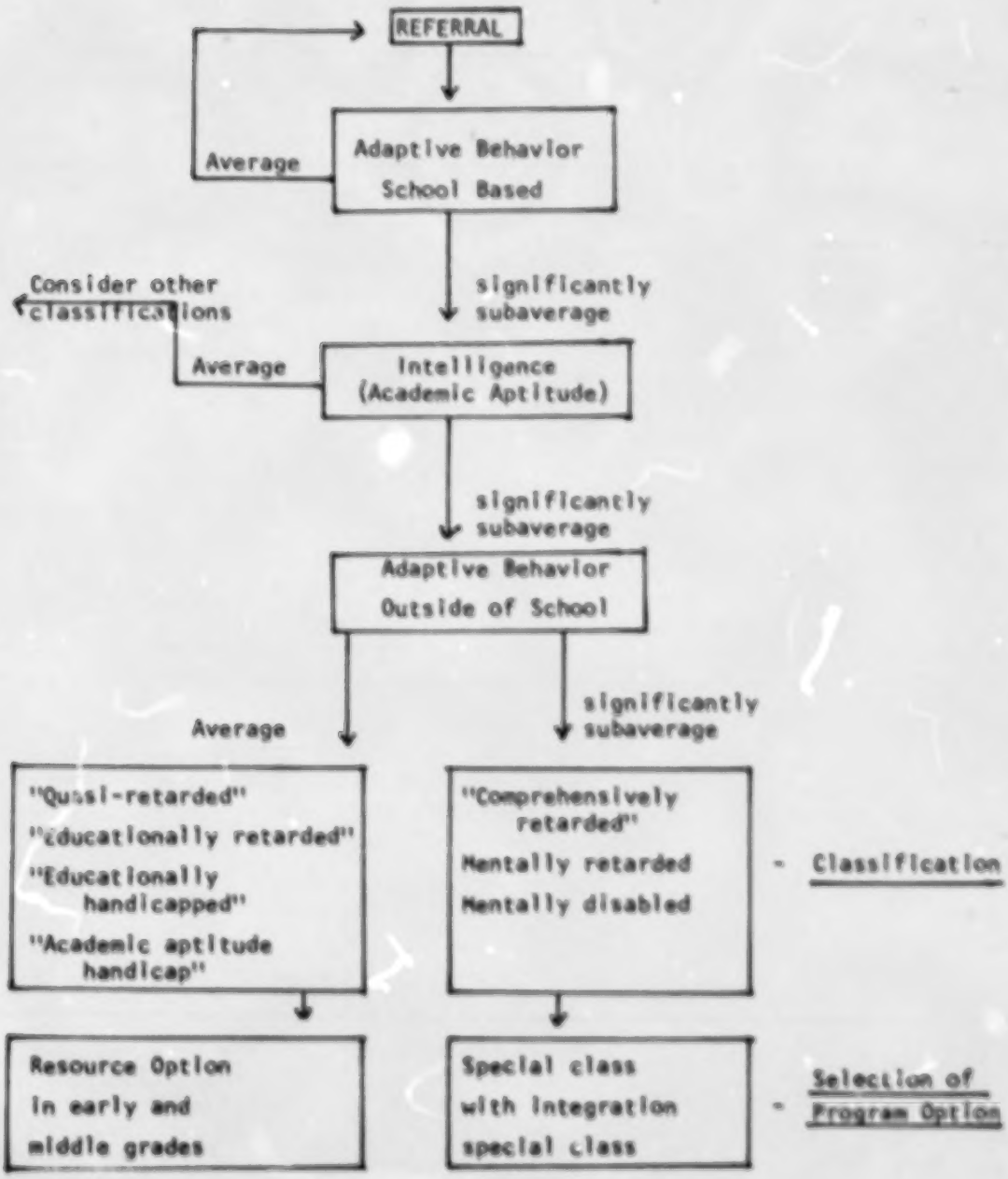
CONCEPTION OF ADAPTIVE BEHAVIOR FOR SCHOOL AGE CHILDREN

	ADAPTIVE BEHAVIOR: SCHOOL BASED
Rationale:	1) Mastery of literacy skills is a key developmental task for persons between the ages of 5 and 17. 2) The expectation for and emphasis on educational competencies is common to most if not all major sociocultural groups.
Assessment:	1) Collection and consideration of a broad variety of information including teacher interview, review of cumulative records, examination of samples of classroom work, classroom observation, results of group standardized achievement tests, results of individual achievement tests, diagnostic achievement tests, and other informal achievement measures.

	ADAPTIVE BEHAVIOR: OUTSIDE OF SCHOOL
Rationale:	1) Mastery of a variety of non-academic competencies also is expected, and a key developmental task between the ages of 5 and 17. 2) The expectations for and opportunities to develop non-academic competencies may vary among sociocultural groups.
Assessment:	1) Collection of information on social role performance outside of school in areas such as: Peer relations, family relationships, degree of independence, responsibilities assumed, economic/vocational activities, etc. 2) Method of collecting data may include formal measures, interviews with parents, interview with student. etc.

Table 11

A TENTATIVE SCHEME FOR USE OF ADAPTIVE BEHAVIOR INFORMATION IN CLASSIFICATION AND SELECTION OF PROGRAM OPTION



ferences, there have been few if any systematic efforts to assess the possible effects of sociocultural status on learning and adjustment problems.

The SOMPA Sociocultural Measures provide systematic methods to assess the possibility of cultural differences. In addition, the SOMPA sociocultural measures are used to provide an indication of the degree of difference between the school environment and the home environment, and to remove biases in conventional measures of intelligence. Elimination of biases in tests is, of course, a nearly impossible task. The SOMPA Estimated Learning Potential procedure attempts to eliminate biases in IQ tests through adjusting scores using the information from the Sociocultural Measures.

Mercer (1979, page 143) suggests the criterion of 15 points difference between the child's conventional scores and the child's Estimated Learning Potential scores to determine whether or not the conventional scores are appropriate indices of the child's intellectual competence. Use of the ELP procedure in Iowa would therefore be based on two questions: Are the sociocultural measures and the multiple regression formulas from California applicable to Iowa school age children? and How many children in Iowa have significant differences between their conventional scores and their Estimated Learning Potential scores.

The relationship of the sociocultural measures to conventional intelligence test scores and the means and distributions of the sociocultural measures were largely the same for students in Iowa and California. However, the ELP procedure based on California multiple regression formulas was not particularly accurate for Iowa school age children. It appears that the major reason for the differences in the ELP norms for Iowa and California children was the higher mean scores of Iowa students on the conventional intelligence test. Moreover, in this sample there were very few children, either white or black, who would meet the criterion of 15 points or more difference between their conventional scores and their ELP scores. On the basis of these two results, it appears that the SOMPA procedure for assessing sociocultural status is both inaccurate and largely unnecessary for students in Iowa.

This project resulted in the development of State of Iowa norms for two recently published instruments, the SOMPA Sociocultural Measures and the SOMPA Adaptive Behavior Inventory for Children. One of the major questions concerning the use of these instruments in Iowa, the generalizability of California norms, was largely resolved with the results of this study. Many other questions remain concerning these instruments. A number of additional analyses have been or will be conducted using the data from this study. Some of the questions to be investigated will relate to the reliability and validity of these instruments. Persons interested in the results of these studies should contact the senior author at the Department of Psychology, Iowa State University, Ames, Iowa 50011.

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